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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/684,174	10/09/2003	Koichi Ono	03-637	2630

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EXAMINER	
VATHYAM, SUREKHA	

ART UNIT	PAPER NUMBER
1753	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/684,174	ONO, KOICHI	
	Examiner	Art Unit	
	Surekha Vathyam	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It improperly identifies the foreign application for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, as P2002-301140 instead of JP2002-301140.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

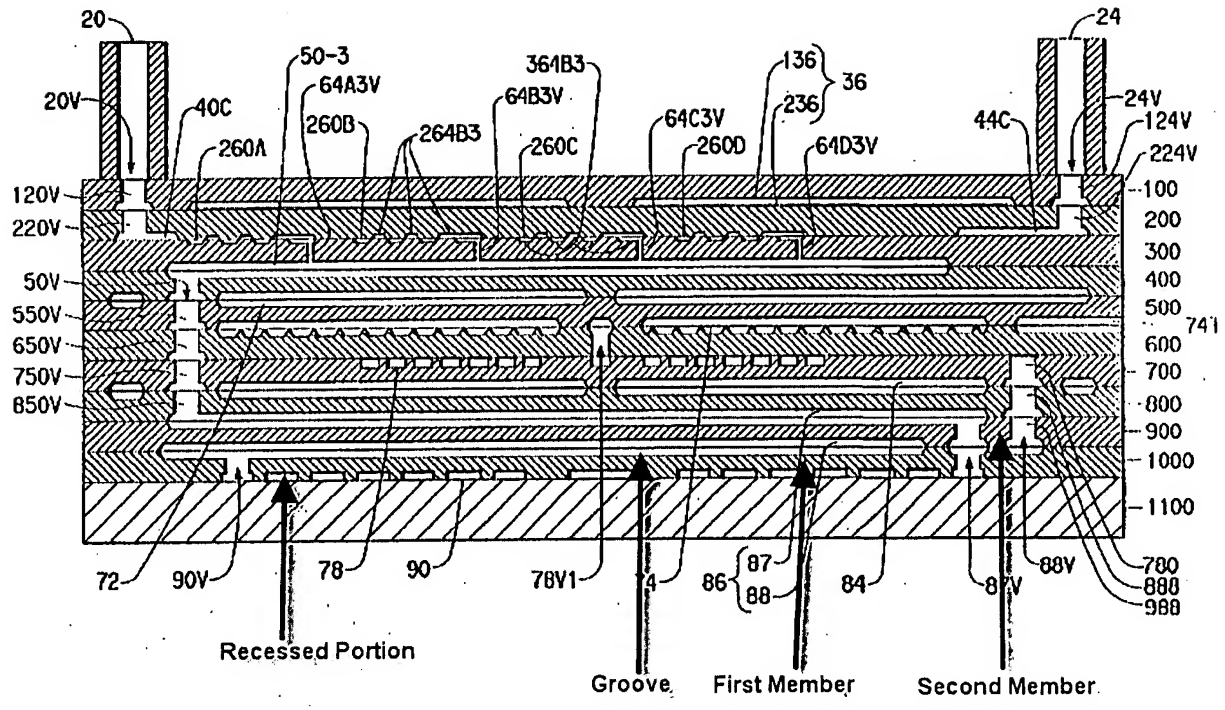
3. Claims 1 – 2, 4 – 9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Ashmead et al. (US 5,534,328).

Regarding claim 1, Ashmead ('328) discloses a resin chip comprising: a first member (700, 800, 900 or 1000) of a resin material (column 2, line 67 – column 3, line 23), said first member having a groove on one side thereof (see figs. 2 – 5 and figs. 11 – 15 and column 2, lines 62 – 64 and column 3, line 65 – column 4, line 11), said groove having a fine cross section and a predetermined length (column 2, lines 64 – 67), only a

part of said groove being arranged in a measuring region in which a sample is to be irradiated with light (column 13, lines 7 – 10 and column 15, lines 30 – 34); and a second member (800, 900, 1000 or 1100) of a resin material (column 2, line 67 – column 3, line 23), said second member being bonded to said one side of said first member (column 6, lines 39 – 54 and column 15, lines 26 – 30), for covering said groove to define a passage between said first and second members (column 3, lines 24 – 31 and column 3, line 65 – column 4, line 11), wherein said first member has a recessed portion on the other side thereof (see figs. 4 and 5), which is opposite to said one side, in at least said region, said groove having a bottom portion having such a thickness that light easily passes through the bottom portion (column 15, lines 30 – 34).

Fig. 5 of Ashmead ('328) is presented to further clarify the claimed features. Considering an example of "1000" to be a first member and "900" to be a second member, a groove is shown on the one side of "1000" and a recessed portion is on the other side thereof. Figs. 2 and 3 of Ashmead ('328) also show the top and bottom view of each member clarifying further the grooves and recessed portions. Similarly each of "700", "800", "900", "1000" and "1100" are a first or second member with grooves and recessed portions. A "recess" is considered as a receding or hollow place, as in a surface, wall, etc. (Webster's New World Dictionary of the American Language Copyright © 1968).

FIG.5



Regarding claim 2, Ashmead ('328) discloses the resin chip wherein said recessed portion has a side wall serving as a condensing wall for reflecting irradiating light toward a bottom face of said recessed portion (see figs. 4 and 5).

Regarding claim 4, Ashmead ('328) discloses the resin chip wherein said first member is formed by injection molding (column 3, lines 51 – 62).

Regarding claim 5, Ashmead ('328) discloses a resin chip comprising: a first resin member (700, 800, 900 or 1000) of a resin material (column 2, line 67 – column 3,

line 23), said first resin member having an elongated groove on one side thereof (see figs. 2 – 5 and figs. 11 – 15 and column 2, lines 62 – 64 and column 3, line 65 – column 4, line 11), said groove having a fine cross section (column 2, lines 64 – 67), only a part of said groove being arranged in a light irradiation region in which a sample is to be irradiated with light (column 13, lines 7 – 10 and column 15, lines 30 – 34); and a second resin member (800, 900, 1000 or 1100) of a resin material (column 2, line 67 – column 3, line 23), said second resin member being bonded to said one side of said first resin member (column 6, lines 39 – 54 and column 15, lines 26 – 30), for covering said groove to define a passage between said first and second members (column 3, lines 24 – 31 and column 3, line 65 – column 4, line 11), wherein said first resin member has a recessed portion on the other side thereof (see figs. 4 and 5), said recessed portion being associated with said groove for allowing light to easily pass through said first and second resin members in said light radiation region portion (column 15, lines 30 – 34). Also refer to fig. 5 of Ashmead ('328) above and explanation provided therewith.

Regarding claim 6, Ashmead ('328) discloses the resin chip wherein said recessed portion is arranged in said light irradiation region (see figs. 1, 4 and 5).

Regarding claim 7, Ashmead ('328) discloses the resin chip wherein said groove has a groove width of about ten to two hundreds micrometers, and a groove depth of about ten to two hundreds micrometers (column 2, lines 64 – 67).

Regarding claim 8, Ashmead ('328) discloses the resin chip wherein said first resin member has a sample receiving hole (20, 24) which communicates with said groove (see figs. 1 and 5).

Regarding claim 9, Ashmead ('328) discloses the resin chip wherein said recessed portion has a side wall serving as a condensing wall for reflecting light toward said groove in said light irradiation region (see figs. 4 and 5).

Regarding claim 11, Ashmead ('328) discloses the resin chip wherein said first resin member is formed by injection molding (column 3, lines 51 – 62).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashmead et al. (US 5,534,328).

Ashmead ('328) discloses the resin chip as discussed with regards to each of claims 1 and 5 above. Regarding each of claims 3 and 10, Ashmead ('328) discloses the resin chip wherein the first member and second member are of a resin material (column 2, line 67 – column 3, line 23). Ashmead ('328) does not explicitly disclose the resin material of the first member is the same as that of said second member.

Column 3, lines 14 – 18 of Ashmead ('328) disclose the use of resin materials for biological sample handling.

It would have been obvious to one of ordinary skill in the art to have made the resin material of the first and second member be the same for simplicity and to reduce cost of production especially for biological sample handling applications.

7. Claims 1 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (JP 11-083798) in view of Ashmead et al. (US 7,150,815).

Regarding claim 1, Nakamura ('798) discloses a resin chip comprising: a first member (2) having a groove (4) on one side thereof, said groove having a fine cross section and a predetermined length (see Drawing 2), only a part of said groove being arranged in a measuring region in which a sample is to be irradiated with light (see Drawing 5); and a second member (1) being bonded to said one side of said first member (see abstract and [0022]) for covering said groove to define a passage between said first and second members (see Drawings 1 , 4 and 6 and abstract), wherein said first member has a recessed portion (6) on the other side thereof, which is opposite to said one side, in at least said region (see Drawings 4 and 6), said groove

having a bottom portion having such a thickness that light easily passes through the bottom portion ([0023]). Nakamura ('798) discloses the first member (2) of silicon substrate and second member (1) of silicon substrate or glass ([0028]) but Nakamura ('798) does not explicitly disclose the first and second member of a resin material.

Ashmead ('815) teaches a resin chip comprising a first member (2) of a resin material (column 5, lines 4 – 25), said first member having a groove (10) on one side thereof, said groove having a fine cross section and a predetermined length (column 5, lines 52 – 58), only a part of said groove being arranged in a measuring region in which a sample is to be irradiated with light (see fig. 3); and a second member (4) of a resin material (column 5, lines 22 – 25), said second member being bonded to said one side of said first member (column 4, lines 15 – 20 and column 6, lines 9 – 28) for covering said groove to define a passage between said first and second members (column 4, lines 15 – 20 and column 5, lines 22 – 25).

It would have been obvious to one of ordinary skill in the art to have modified the resin chip of Nakamura ('798) to comprise a first and second member made of resin material as taught by Ashmead ('815) because as Ashmead ('815) explains the resin material overcomes the drawbacks of silicon substrates (column 1, lines 34 – 45) such as those of Nakamura ('798) and provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 2, Nakamura ('798) discloses the resin chip, wherein said recessed portion (6) has a side wall serving as a condensing wall for reflecting irradiating light toward a bottom face of said recessed portion (see Drawing 4 and 6).

Regarding claim 3, Nakamura ('798) discloses the resin chip wherein said first member is formed of the same material as that of said second member ([0028]). Nakamura ('798) does not explicitly disclose the material to be a resin.

Ashmead ('815) teaches a resin chip comprising a first and second member formed of the same resin material (column 6, lines 10 – 13 and column 9, lines 22 – 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Nakamura ('798) and substitute the material of the first and second member with a resin as taught by Ashmead ('815) because as Ashmead explains the resin provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 4, Nakamura ('798) does not explicitly disclose the first member is formed by injection molding.

Ashmead ('815) teaches a resin chip wherein a first member is formed by injection molding (column 8, line 33 – column 9, line 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Nakamura ('798) to form the first member by injection molding as taught by Ashmead ('815) because as Ashmead ('815) explains the advantage of injection molding especially in the field of microfluidics is that it makes manufacturing inexpensive (column 4, lines 16 – 20).

Regarding claim 5, Nakamura ('798) discloses a resin chip comprising: a first member (2) having an elongated groove (4) on one side thereof (see Drawings 1 and 2), said groove having a fine cross section (see Drawing 2), only a part of said groove being arranged in a light irradiation region in which a sample is to be irradiated with light (see Drawing 5); and a second member (1), being bonded to said one side of said first member (abstract and [0022]), for covering said groove ([0015]) to define a passage between said first and second members (see Drawings 1 , 4 and 6 and abstract), wherein said first member has a recessed portion (6) on the other side thereof (see Drawings 4 and 6), said recessed portion being associated with said groove for allowing light to easily pass through said first and second members in said light radiation region ([0023]). Nakamura ('798) discloses the first member (2) of silicon substrate and second member (1) of silicon substrate or glass ([0028]) but Nakamura ('798) does not explicitly disclose the first and second member of a resin material.

Ashmead ('815) teaches a resin chip comprising a first resin member (2) of a resin material (column 5, lines 4 – 25), said first resin member having an elongated groove (10) on one side thereof, said groove having a fine cross section (column 5,

lines 52 – 58), only a part of said groove being arranged in a light irradiation region in which a sample is to be irradiated with light (see fig. 3); and a second resin member (4) of a resin material (column 5, lines 22 – 25), said second resin member being bonded to said one side of said first resin member (column 4, lines 15 – 20 and column 6, lines 9 – 28) for covering said groove to define a passage between said first and second resin members (column 4, lines 15 – 20 and column 5, lines 22 – 25).

It would have been obvious to one of ordinary skill in the art to have modified the resin chip of Nakamura ('798) to comprise a first and second member made of resin material as taught by Ashmead ('815) because as Ashmead ('815) explains the resin material overcomes the drawbacks of silicon substrates (column 1, lines 34 – 45) such as those of Nakamura ('798) and provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 6, Nakamura ('798) discloses the resin chip wherein said recessed portion is arranged in said light irradiation region ([0023]).

Regarding claim 7, Nakamura ('798) does not explicitly disclose the width and depth of the groove.

Ashmead ('815) teaches a resin chip wherein said groove has a groove width of about ten to two hundreds micrometers, and a groove depth of about ten to two hundreds micrometers (column 5, lines 52 – 60).

It would have been obvious to one of ordinary skill in the art to have made the groove in the resin chip of Nakamura ('798) have the small width and depth taught by Ashmead ('815) because as Ashmead ('815) explains these smaller dimensions are especially desirable for capillary electrophoretic separation as they minimize the spatial spread of sample plug in sample inlet channel (column 1, lines 55 – 58).

Regarding claim 8, Nakamura ('798) discloses the resin chip wherein said first member (2) has a sample receiving hole (5a, 5b, 5c and 5d) which communicates with said groove (see Drawings 1 and 2).

Regarding claim 9, Nakamura ('798) discloses the resin chip wherein said recessed portion (6) has a side wall serving as a condensing wall for reflecting light toward said groove in said light irradiation region (see Drawings 4 and 6).

Regarding claim 10, Nakamura ('798) discloses the resin chip wherein said first member is formed of the same material as that of said second member ([0028]). Nakamura ('798) does not explicitly disclose the material to be a resin.

Ashmead ('815) teaches a resin chip comprising a first and second member formed of the same resin material (column 9, lines 22 – 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Nakamura ('798) and substitute the material of the first and second member with a resin as taught by Ashmead ('815) because as Ashmead explains the resin provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 11, Nakamura ('798) does not explicitly disclose the first member is formed by injection molding.

Ashmead ('815) discloses a resin chip wherein a first resin member is formed by injection molding (column 8, line 33 – column 9, line 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Nakamura ('798) to form the first member by injection molding as taught by Ashmead ('815) because as Ashmead ('815) explains the advantage of injection molding especially in the field of microfluidics is that it makes manufacturing inexpensive (column 4, lines 16 – 20).

8. Claims 1 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staats (WO 2002/061400 A1) in view of Ashmead et al. (US 7,150,815).

Regarding claim 1, Staats ('400) discloses a resin chip comprising: a first member (122) of a resin material (page 8, lines 6 – 9), said first member having a groove (108) on one side thereof (see fig. 4, view A and B, especially view B the groove is seen under a second member which is the cover layer on top of the first member (122); the groove (108) is seen in the first member (122) opposite a recessed portion wherein the optics are arranged on either side of the first member and see page 7, lines 11 – 17), said groove having a fine cross section and a predetermined length (see fig. 4, view A), only a part of said groove being arranged in a measuring region in which a sample is to be irradiated with light (see fig. 4 and page 6, lines 4 – 17); and a second member (see fig. 4, view B, cover layer on top of 122, not labeled) being bonded to said one side of said first member (page 4, lines 20 – 22) for covering said groove to define a passage between said first and second members (page 4, lines 20 – 22), wherein said first member has a recessed portion on the other side thereof (see fig. 4, view B), which is opposite to said one side, in at least said region, said groove having a bottom portion having such a thickness that light easily passes through the bottom portion (page 8, lines 7 – 12). Staats ('400) does not explicitly disclose the second member of a resin material.

Ashmead ('815) teaches a resin chip comprising a first member (2) of a resin material (column 5, lines 4 – 25), said first member having a groove (10) on one side thereof, said groove having a fine cross section and a predetermined length (column 5, lines 52 – 58), only a part of said groove being arranged in a measuring region in which a sample is to be irradiated with light (see fig. 3); and a second member (4) of a resin

material (column 5, lines 22 – 25), said second member being bonded to said one side of said first member (column 4, lines 15 – 20 and column 6, lines 9 – 28) for covering said groove to define a passage between said first and second members (column 4, lines 15 – 20 and column 5, lines 22 – 25).

It would have been obvious to one of ordinary skill in the art to have modified the resin chip of Staats ('400) to comprise a second member made of resin material as taught by Ashmead ('815) because as Ashmead ('815) explains the resin material provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 2, Staats ('400) discloses the resin chip wherein said recessed portion has a side wall serving as a condensing wall for reflecting irradiating light toward a bottom face of said recessed portion (see fig. 4, view B).

Regarding claim 3, Staats ('400) discloses the resin chip wherein said first member is formed of a resin material (page 8, lines 6 – 9). Staats ('400) discloses a second member (page 4, lines 20 – 22) but does not explicitly disclose it formed of the same resin material.

Ashmead ('815) teaches a resin chip comprising a first and second member formed of the same resin material (column 9, lines 22 – 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Staats ('400) and substitute the material of the first and second member with the same resin as taught by Ashmead ('815) because as Ashmead explains the resin provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 4, Staats ('400) does not explicitly disclose the first member is formed by injection molding.

Ashmead ('815) teaches a resin chip wherein a first member is formed by injection molding (column 8, line 33 – column 9, line 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Nakamura ('798) to form the first member by injection molding as taught by Ashmead ('815) because as Ashmead ('815) explains the advantage of injection molding especially in the field of microfluidics is that it makes manufacturing inexpensive (column 4, lines 16 – 20).

Regarding claim 5, Staats ('400) discloses a resin chip comprising: a first resin member (122) of a resin material (page 8, lines 6 – 9), said first resin member having an elongated groove (108) on one side thereof (see fig. 4, view A and B, especially view B the groove is seen under a second member which is the cover layer on top of the first member (122); the groove (108) is seen in the first member (122) opposite a recessed portion wherein the optics are arranged on either side of the first member and see page 7, lines 11 – 17), said groove having a fine cross section (see fig. 4, view A), only a part of said groove being arranged in a light irradiation region in which a sample is to be irradiated with light (see fig. 1 and page 6, lines 4 – 17); and a second member (see fig. 4, view B, cover layer on top of 122, not labeled), being bonded to said one side of said first resin member (page 4, lines 20 – 22), for covering said groove to define a passage between said first and second resin members (page 4, lines 20 – 22), wherein said first resin member has a recessed portion on the other side thereof (see fig. 4, view B), said recessed portion being associated with said groove for allowing light to easily pass through said first and second members in said light radiation region (page 8, lines 7 – 12). Staats ('400) does not explicitly disclose the second member formed of a resin material.

Ashmead ('815) teaches a resin chip comprising a first resin member (2) of a resin material (column 5, lines 4 – 25), said first resin member having an elongated groove (10) on one side thereof, said groove having a fine cross section (column 5, lines 52 – 58), only a part of said groove being arranged in a light irradiation region in which a sample is to be irradiated with light (see fig. 3); and a second resin member (4)

of a resin material (column 5, lines 22 – 25), said second resin member being bonded to said one side of said first resin member (column 4, lines 15 – 20 and column 6, lines 9 – 28) for covering said groove to define a passage between said first and second resin members (column 4, lines 15 – 20 and column 5, lines 22 – 25).

It would have been obvious to one of ordinary skill in the art to have modified the resin chip of Staats ('400) to comprise a second member made of resin material as taught by Ashmead ('815) because as Ashmead ('815) explains the resin material provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 6, Staats ('400) discloses the resin chip wherein said recessed portion is arranged in said light irradiation region (see fig. 4, view B).

Regarding claim 7, Staats ('400) does not explicitly disclose the width and depth of the groove.

Ashmead ('815) teaches a resin chip wherein said groove has a groove width of about ten to two hundreds micrometers, and a groove depth of about ten to two hundreds micrometers (column 5, lines 52 – 60).

It would have been obvious to one of ordinary skill in the art to have made the groove in the resin chip of Nakamura ('798) have the small width and depth taught by Ashmead ('815) because as Ashmead ('815) explains these smaller dimensions are especially desirable for capillary electrophoretic separation as they minimize the spatial spread of sample plug in sample inlet channel (column 1, lines 55 – 58).

Regarding claim 8, Staats ('400) discloses the resin chip wherein said first resin member has a sample receiving hole which communicates with said groove (see fig. 1 and page 6, lines 20 – 23).

Regarding claim 9, Staats ('400) discloses the resin chip wherein said recessed portion has a side wall serving as a condensing wall for reflecting light toward said groove in said light irradiation region (see fig. 4, view B).

Regarding claim 10, Staats ('400) discloses the resin chip wherein said first resin member is formed of a resin material (page 8, lines 6 – 9). Staats ('400) does not explicitly disclose the second member formed of the same resin material.

Ashmead ('815) teaches a resin chip comprising a first and second member formed of the same resin material (column 9, lines 22 – 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Staats ('400) and substitute the material of the first and second member with the same resin as taught by Ashmead ('815) because as Ashmead explains the resin

provides numerous benefits in the field of microfluidics especially, being injection moldable thus making it inexpensive to manufacture (column 4, lines 16 – 20) and being substantially transparent at ultraviolet wavelengths and having a low fluorescence background at visible wavelengths thus improving optical detection of analytes (column 5, lines 4 – 11).

Regarding claim 11, Staats ('400) does not explicitly disclose the first member is formed by injection molding.

Ashmead ('815) teaches a resin chip wherein a first member is formed by injection molding (column 8, line 33 – column 9, line 45).

It would have been obvious to one of ordinary skill in the art to modify the resin chip of Nakamura ('798) to form the first member by injection molding as taught by Ashmead ('815) because as Ashmead ('815) explains the advantage of injection molding especially in the field of microfluidics is that it makes manufacturing inexpensive (column 4, lines 16 – 20).

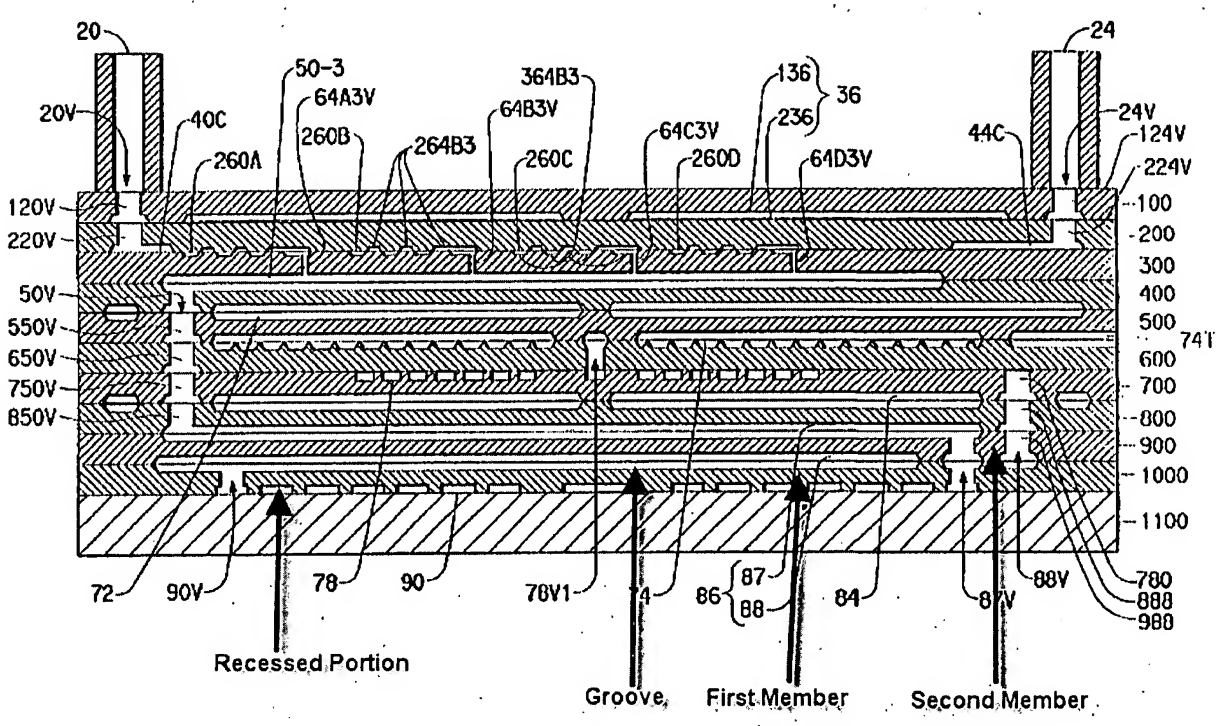
Response to Arguments

Applicant's arguments filed 2 May 2007 have been fully considered but they are not persuasive. Applicant's claim amendments overcome the rejection of claims 1 and 2 under 35 USC § 102 as being anticipated by Nakamura ('798) or Katsura ('181) or Staats ('400). However, Ashmead ('328) anticipates claims 1 – 2, 4 – 9 and 11 under

102(b). Contrary to applicant's remarks Ashmead ('328) discloses a resin chip which comprises a first member (700, 800, 900 or 1000) of a resin material (column 2, line 67 – column 3, line 23) having a groove (see figs. 2 – 5 and figs. 11 – 15 and column 2, lines 62 – 64 and column 3, line 65 – column 4, line 11) and a second member (800, 900, 1000 or 1100) of a resin material (column 2, line 67 – column 3, line 23), said second member being bonded to said one side of said first member (column 6, lines 39 – 54 and column 15, lines 26 – 30), for covering said groove to define a passage between said first and second members (column 3, lines 24 – 31 and column 3, line 65 – column 4, line 11). Contrary to applicant's remarks Ashmead ('328) discloses that a member of a resin material having a groove on one side thereof (see figs. 2 – 5 and figs. 11 – 15 and column 2, lines 62 – 64 and column 3, line 65 – column 4, line 11) has a recessed portion on the other side thereof (see figs. 4 and 5), so that the bottom portion of the groove has such a thickness that light easily passes through the bottom portion (column 15, lines 30 – 34). Furthermore, Ashmead ('328) discloses only a part of a groove formed in a member is arranged in a measuring region in which a sample is to be irradiated with light (column 13, lines 7 – 10 and column 15, lines 30 – 34). Fig. 5 of Ashmead ('328) is presented to further clarify the claimed features. Considering an example of "1000" to be a first member and "900" to be a second member, a groove is shown on the one side of "1000" and a recessed portion is on the other side thereof. Figs. 2 and 3 of Ashmead ('328) also show the top and bottom view of each member clarifying further the grooves and recessed portions. Similarly each of "700", "800", "900", "1000" and "1100" are a first or second member with grooves and recessed

portions. A "recess" is considered as a receding or hollow place, as in a surface, wall, etc. (Webster's New World Dictionary of the American Language Copyright © 1968).

FIG.5



Applicant's argument that Ashmead ('328) fails to disclose or suggest any resin chips capable of "being produced in large quantities in a sort [sic] time by injection molding or the like" is not persuasive because the patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695,

698, 227 USPQ 964, 966 (Fed. Cir. 1985). Nonetheless, Ashmead ('328) discloses the resin chips being produced in large quantities (column 7, lines 58 – 66) by injection molding and the like (column 3, lines 51 – 62).

Regarding the rejection of claims 1 – 11 under 35 USC § 103 as being unpatentable over Nakamura ('798) or Staats ('400) in view of Ashmead ('815), applicant argues that "Ashmead ('815) fails to disclose or suggest any resin chips capable of improving sensitivity of measurement and of being produced in large quantities in a short time by injection molding or the like". However Ashmead ('815) does disclose a resin chip that improves sensitivity (column 3, lines 37 – 40) and is produced in large quantities inexpensively by injection molding (column 4, lines 15 – 20). In addition Ashmead ('815) discloses a member (2) of a resin material (column 5, lines 4 – 25) having a groove (10) on one side thereof and only a part of the groove formed in the member is arranged in a measuring region in which a sample is to be irradiated with light (see fig. 3). Applicant correctly points out that Ashmead ('815) does not explicitly disclose the resin material has a recessed portion on the other side. However, Ashmead ('815) is not being relied upon for the recessed portion. Nakamura ('798) or Staats ('400) each disclose a member having a groove on one side thereof and a recessed portion on the other side as discussed above. The teachings of Ashmead ('815) with those of either Nakamura ('798) or Staats ('400) disclose the claim limitations in combination and the references are relied upon for their combined teachings.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Surekha Vathyam whose telephone number is 571-272-2682. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SV/
12 July 2007

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